

Amendments to the Claims:

The following listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) An RF module comprising:
a first waveguide for propagating electromagnetic waves in a TEM mode; and
a second waveguide connected to the first waveguide, for propagating electromagnetic waves in another mode different from the TEM mode,
wherein the second waveguide has a region surrounded by at least two ground electrodes facing each other and conductors for bringing at least two ground electrodes into conduction, electromagnetic waves propagate in the region,
the first waveguide extends in a direction orthogonal to a stacking direction of the ground electrodes, an end of the first waveguide is directly or indirectly connected so as to be conductive to one of the ground electrodes of the second waveguide from the direction orthogonal to the stacking direction, and
magnetic fields of the first and second waveguides are coupled in an E plane of the second waveguide so that the direction of the magnetic field of the electromagnetic waves propagated in the first waveguide and ~~that the direction~~ of the magnetic field of the electromagnetic waves in another mode propagated in the second waveguide match with each other.
2. (Currently Amended) An RF module according to claim 1, wherein the second waveguide is to propagate the electromagnetic waves in a TE mode.
3. (Original) An RF module according to claim 1, wherein the first waveguide is positioned between the ground electrodes facing each other in the second waveguide, and
an end of the first waveguide is conductively connected to one of the ground electrodes facing each other.

4. (Currently Amended) An RF module according to claim 1, wherein the first waveguide has ~~a line pattern made of a conductor formed on a dielectric substrate~~ a dielectric substrate, and
a line pattern disposed on the dielectric substrate.

5. (Currently Amended) An RF module according to claim 4, wherein a plurality of penetrating conductors penetrating the dielectric substrate are provided around the line pattern so as to sandwich the line pattern and

~~the an interval in the width direction of~~ between the penetrating conductors sandwiching the line pattern in the width direction is equal to or less than a cut-off frequency of the electromagnetic waves propagating through the first waveguide.

6. (Currently Amended) An RF module according to claim 5, wherein ~~coupling between the first and second waveguides is adjusted by adjusting the interval of the penetrating conductors~~ the interval between the penetrating conductors is decided on the basis of the degree of magnetic coupling.

7. (Original) An RF module according to claim 1, wherein a penetrating conductor for coupling adjustment is provided in a coupling portion between the first and second waveguides.

8. (Original) An RF module according to claim 3, wherein a window is provided in at least one of a ground electrode side to which the first waveguide is conductively connected and the side opposite to the ground electrode side in the coupling portion of the first waveguide.

9. (Currently Amended) An RF module according to claim 1, wherein the second waveguide has a stacking structure in which three or more ground electrodes are stacked and ~~has a plurality of propagation regions for propagating electromagnetic waves in~~

~~the stacking direction,~~has a plurality of propagation regions for the electromagnetic waves in
the stacking direction, and

an end of the first waveguide is conductively connected to the ground
electrode between neighboring propagation regions in the second waveguide.

10. (Currently Amended) An RF module according to claim 9, wherein an end of
the first waveguide is conductively connected to a ground electrode between neighboring
propagation regions in the second waveguide so that the electromagnetic waves propagated
through the first waveguide are branched and propagated into the plurality of propagation
regions in the second waveguide.

11. (Original) An RF module according to claim 1, wherein the first waveguide is
a strip line, a microstrip line, or a coplanar line.

12. (Currently Amended) An RF module according to claim 1, wherein the
second waveguide is to propagate ~~electromagnetic waves in a multiple mode~~the
electromagnetic waves in another mode in a multiple mode.

13-14. (Canceled)